SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification of the substance
1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide

Registration number (REACH)
unavailable

EC number
606-989-0

CAS number
223437-11-4

Alternative number(s)
00316.1000

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses
Product and process orientated research and development

Uses advised against
Do not use for private purposes (household)

1.3 Details of the supplier of the safety data sheet

Proionic GmbH
Parkring 18, Trakt H/1
A-8074 Grambach
Austria

Telephone: +43 (0) 316 4009-4200
Telefax: +43 (0) 316 4009-4228
e-mail: office@proionic.com
Website: www.proionic.com

1.4 Emergency telephone number

Poisoning information center Austria: +43 (0) 1 406 43 43

Emergency information service
Mo-fr 8am-4pm (CET): +43 (0) 316/ 4009- 4200

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Caution! Substance not yet fully tested. All information refers to analogy circuits.

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Category</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1O</td>
<td>acute toxicity (oral)</td>
<td>3</td>
<td>Acute Tox. 3</td>
<td>H301</td>
</tr>
<tr>
<td>3.2</td>
<td>skin corrosion/irritation</td>
<td>2</td>
<td>Skin Irrit. 2</td>
<td>H315</td>
</tr>
<tr>
<td>3.3</td>
<td>serious eye damage/eye irritation</td>
<td>2</td>
<td>Eye Irrit. 2</td>
<td>H319</td>
</tr>
<tr>
<td>3.8R</td>
<td>specific target organ toxicity - single exposure (respiratory tract irritation)</td>
<td>3</td>
<td>STOT SE 3</td>
<td>H335</td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.

2.2 Label elements
1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance: 1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide

Identifiers

<table>
<thead>
<tr>
<th>CAS No</th>
<th>223437-11-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC No</td>
<td>606-989-0</td>
</tr>
<tr>
<td>Purity</td>
<td>98.5 – 99.9 %</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C11H20F6N2O4S2</td>
</tr>
<tr>
<td>Molar mass</td>
<td>422.4 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- signal word: danger
- pictograms: GHS06
- hazard statements
  H301 Toxic if swallowed.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.
- precautionary statements
  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P312 Call a POISON CENTRE/doctor if you feel unwell.
  P330 Rinse mouth.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  P501 Dispose of contents/container to industrial combustion plant.

2.3 Other hazards of no significance
Following inhalation
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact
Wash with plenty of soap and water.

Following eye contact
Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion
Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed
See SECTION 2.

4.3 Indication of any immediate medical attention and special treatment needed
none

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media
Water jet

5.2 Special hazards arising from the substance or mixture
Hazardous combustion products
Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Sulphur oxides (SOx), Hydrogen fluoride (HF)

5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Remove persons to safety.

For emergency responders
Wear adequate personal equipment. Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.
6.3 Methods and material for containment and cleaning up

Advises on how to contain a spill
Covering of drains

Advises on how to clean up a spill
Collect spillage. Wipe up with absorbent material (e.g. cloth, fleece). Sawdust. Kieselgur (diatomite). Sand. Universal binder.

Appropriate containment techniques
Use of adsorbent materials.

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations
Use local and general ventilation. Use only in well-ventilated areas.

- specific notes/details
Avoid contact with skin and eyes.

Advice on general occupational hygiene
Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities
Store locked up. Keep container tightly closed and in a well-ventilated place. Keep away from other materials. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

- packaging compatibilities
Only packagings which are approved (e.g. acc. to ADR) may be used.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
These information are not available.

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)
The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Eye/face protection
Wear eye/face protection.

Skin protection
- body protection
  Wear suitable protective clothing. Chemical protective clothing. Complete protective clothing.
- hand protection
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use.
- other protection measures
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls
Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless to lightly yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other safety parameters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant, (fluid)</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>information on this property is not available</td>
</tr>
</tbody>
</table>
**Solubility(ies)**  
not determined

**Partition coefficient**

| - n-octanol/water (log KOW) | this information is not available |

**Auto-ignition temperature**  
not determined

**Viscosity**  
not determined

**Explosive properties**  
none

**Oxidising properties**  
none

**Other information**  
there is no additional information

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
Concerning incompatibilities: see below "conditions to avoid".

### 10.2 Chemical stability
Stable when stored under the recommended storage conditions and in the original packaging.

### 10.3 Possibility of hazardous reactions
No data available.

### 10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials
There is no additional information.

### 10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects
All information refers to analogy circuits.

**Classification according to GHS (1272/2008/EC, CLP)**

**Acute toxicity**
Toxic if swallowed.

**Skin corrosion/irritation**
Causes skin irritation.

**Serious eye damage/eye irritation**
Causes serious eye irritation.

**Respiratory or skin sensitisation**
No data available.
Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
No data available.

SECTION 12: Ecological information

12.1 Toxicity
Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability
Data are not available.

12.3 Bioaccumulative potential
Data are not available.

12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Other adverse effects
Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/container to industrial combustion plant.

Waste treatment-relevant information
Incineration.

Sewage disposal-relevant information
Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packagings
It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.
Remarks
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th>14.1</th>
<th>UN number</th>
<th>2810</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2</td>
<td>Shipping name</td>
<td>TOXIC LIQUID, ORGANIC, N.O.S.</td>
</tr>
<tr>
<td>14.3</td>
<td>Transport hazard class(es)</td>
<td>6.1 (toxic substances)</td>
</tr>
<tr>
<td>14.4</td>
<td>Packing group</td>
<td>II (substance presenting medium danger)</td>
</tr>
<tr>
<td>14.5</td>
<td>Environmental hazards</td>
<td>non-environmentally hazardous acc. to the dangerous goods regulations</td>
</tr>
<tr>
<td>14.6</td>
<td>Special precautions for user</td>
<td>Provisions for dangerous goods (ADR) should be complied within the premises.</td>
</tr>
<tr>
<td>14.7</td>
<td>Transport in bulk according to Annex II of MARPOL and the IBC Code</td>
<td>The cargo is not intended to be carried in bulk.</td>
</tr>
</tbody>
</table>

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

<table>
<thead>
<tr>
<th>UN number</th>
<th>2810</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>TOXIC LIQUID, ORGANIC, N.O.S.</td>
</tr>
<tr>
<td>Class</td>
<td>6.1</td>
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<tr>
<td>Classification code</td>
<td>T1</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Danger label(s)</td>
<td>6.1</td>
</tr>
<tr>
<td>Special provisions (SP)</td>
<td>274, 614, 802(ADN)</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
<td>E4</td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
<td>100 ml</td>
</tr>
<tr>
<td>Transport category (TC)</td>
<td>2</td>
</tr>
<tr>
<td>Tunnel restriction code (TRC)</td>
<td>D/E</td>
</tr>
<tr>
<td>Hazard identification No</td>
<td>60</td>
</tr>
</tbody>
</table>

International Maritime Dangerous Goods Code (IMDG)

<table>
<thead>
<tr>
<th>UN number</th>
<th>2810</th>
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</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>TOXIC LIQUID, ORGANIC, N.O.S.</td>
</tr>
<tr>
<td>Class</td>
<td>6.1</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
</tbody>
</table>
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>EC No</td>
<td>The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
</tbody>
</table>
Abbr. | Descriptions of used abbreviations
--- | ---
ELINCS | European List of Notified Chemical Substances
EmS | Emergency Schedule
GHS | “Globally Harmonized System of Classification and Labelling of Chemicals” developed by the United Nations
IATA | International Air Transport Association
IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO | International Civil Aviation Organization
IMDG | International Maritime Dangerous Goods Code
MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of “Marine Pollutant”)
NLP | No-Longer Polymer
PBT | Persistent, Bioaccumulative and Toxic
REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals
RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
vPvB | Very Persistent and very Bioaccumulative

Key literature references and sources for data
Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).

Classification procedure
All information on physical and chemical properties, except it is specially mentioned, based on literature references.
Classification is based on the tested substance as well as on relevant literature relating to the anion of the substance.

List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
</tbody>
</table>

Disclaimer
The data contained in this safety data sheet are based on the current knowledge and experience of proionic GmbH and do not purport to be all inclusive. The safety data sheet shall be used only as a guide. The data do not describe the product’s properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose, except as mentioned, be deduced from the data contained in this safety data sheet. It is the responsibility of the recipient of the product to ensure that any proprietary rights and existing laws and legislation are observed. Proionic GmbH shall not be held liable for any damage resulting from handling or from contact with the above product. This safety data sheet has been compiled and is solely intended for this product – it may not be valid for this product used in combination with any material or any process.